UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/552,640	10/07/2005	Peter Kammerhofer	64223(52059)	9136

21874 7590 09/28/2007
EDWARDS ANGELL PALMER & DODGE LLP
P.O. BOX 55874
BOSTON, MA 02205

EXAMINER	
CHO, JENNIFER Y	
ART UNIT	PAPER NUMBER
1621	

MAIL DATE	DELIVERY MODE
09/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/552,640	KAMMERHOFER ET AL.	
	Examiner	Art Unit	
	Jennifer Y. Cho	1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 October 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) *1-3* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *4-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-15* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 October 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/7/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-3, drawn to an apparatus for the production of vinyl chloride, classified in class 570, subclass various.

II. Claims 4-15, drawn to a process for the production of vinyl chloride, classified in class 570, subclass 226.

Groups I and II are related as apparatus and process of making the product. The inventions in this relationship are distinct if either or both of the following can be shown: (1) that the apparatus as claimed is not an obvious apparatus for making the product and the apparatus can be used for making a materially different product or (2) that the product as claimed can be made by another and materially different apparatus (MPEP § 806.05(g)). In this case, the apparatus for the production of vinyl chloride can be used to make butadiene chloride and other chlorinated alkenes.

Restriction for examination purposes as indicated is proper because all these inventions listed in this action are independent or distinct for the reasons given above and there would be a serious search and examination burden if restriction were not required because one or more of the following reasons apply:

(a) the inventions have acquired a separate status in the art in view of their different classification;

(b) the inventions have acquired a separate status in the art due to their recognized divergent subject matter;

(c) the inventions require a different field of search (for example, searching different classes/subclasses or electronic resources, or employing different search queries);

(d) the prior art applicable to one invention would not likely be applicable to another invention;

(e) the inventions are likely to raise different non-prior art issues under 35 U.S.C. 101 and/or 35 U.S.C. 112, first paragraph.

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a invention to be examined even though the requirement may be traversed (37 CFR 1.143) **and (ii) identification of the claims encompassing the elected invention**.

The election of an invention may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse. Traversal must be presented at the time of election in order to be considered timely. Failure to timely traverse the requirement will result in the loss of right to petition under 37 CFR 1.144. If claims are added after the election, applicant must indicate which of these claims are readable on the elected invention.

If claims are added after the election, applicant must indicate which of these claims are readable upon the elected invention.

Should applicant traverse on the ground that the inventions are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

During a telephone conversation with Christine O'Day on 9/13/07 a provisional election was made without traverse to prosecute the invention of Group II, claims 4-15. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-3 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Detailed Action

This office action is in response to Applicant's communication filed on 10/7/2005. Claims 1-15 are pending in this application.

IDS

The information disclosure statement (IDS) filed on 10/7/2005 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Link et al. (US 4,798,914).

The instant claims are drawn to a method for the production of vinyl chloride by thermal cracking of 1,2-dichloroethane in a cracking furnace, in which a medium

pressure of from 1.4 to 2.5 Mpa is maintained and an external heatable and regulatable heat exchanger is used.

Link et al. teaches a method for the production of vinyl chloride by thermal cracking of 1,2-dichloroethane in a cracking furnace, in which a medium pressure of from 2.1 to 2.9 Mpa is maintained and an external heat exchanger is used (abstract; column 5, lines 31-33; column 8, lines 19-23; column 10, example 2 lines 6-68; column 11, lines 1-34).

Link et al. is deficient in the sense that it does not teach applicant's exact pressure range.

However, it is the position of the examiner that one of ordinary skill in the art, would through routine and normal experimentation determine the optimum pressure range to provide the best effective variable depending on the results desired. Thus it would be obvious in the optimization process, to optimize the pressure range of the reaction through routine experimentation.

Therefore, it would be prima facie obvious to one of ordinary skill in the art, to maintain the appropriate pressure range, with the reasonable expectation that varying the pressure would lower by-product formation, utilize the heat of the reaction for energy conservation, and increase the yield of vinyl chloride. Absent any showing of unusual and/or unexpected results over Link et al.'s process, the claim is deemed to be obvious.

Claims 4-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Link et al. (US 4,798,914), in view of Dummer et al. (US 4,822,932).

The instant claims are drawn to a method for the production of vinyl chloride by thermal cracking of 1,2-dichloroethane in a cracking furnace, in which a medium pressure of from 1.4 to 2.5 Mpa, and temperature ranges of 120-150°C, 200-250°C and 450-550°C are maintained, along with an external heatable and regulatable heat exchanger.

Link et al. teaches a method for the production of vinyl chloride by thermal cracking of 1,2-dichloroethane in a cracking furnace, in which a medium pressure of from 2.1 to 2.9 Mpa, and a temperature of 220°C to 275 °C is maintained, along with successive external heat exchangers and burners (abstract; column 5, lines 31-33; column 8, lines 19-23 and 54-56; column 10, example 2 lines 6-68; column 11, lines 1-34).

Link et al. is deficient in the sense that it does not teach applicant's particular temperature range, pressure range or the quench column.

Dummer et al. teaches a method for the production of vinyl chloride by thermal cracking of 1,2-dichloroethane by using a quench column and a heat exchanger, with the temperature ranging from 480° to 540°C, down to 150° to 250°C (abstract).

In regards to the temperature and pressure limitations, it is the position of the examiner that one of ordinary skill in the art, would through routine and normal experimentation determine the optimum temperature and pressure range to provide the best effective variable depending on the results desired. Thus it would be obvious in the optimization process, to optimize the temperature and pressure range of the reaction through routine experimentation.

Therefore, it would be prima facie obvious to one of ordinary skill in the art, to maintain the appropriate temperature and pressure range, and substitute Dummer et al.'s quench column, for Link et al.'s vinyl chloride synthesis, with the reasonable expectation that varying the pressure would lower by-product formation, utilize the heat of the reaction for energy conservation, and increase the yield of vinyl chloride. Absent any showing of unusual and/or unexpected results over Link et al. and Dummer et al.'s processes, the claims are deemed to be obvious. Furthermore, the limitations in some of the dependent claims, not expressly taught in the art, are also deemed to be obvious. One of ordinary skill in the art would be motivated to tweak and optimize these parameters to arrive at the instantly claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer Y. Cho whose telephone number is (571) 272 6246. The examiner can normally be reached on 9 AM - 6 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yvonne Eyler can be reached on (571) 272-0871. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jennifer Cho
Patent Examiner
Art Unit: 1621

/ / FOR

Yvonne Eyler
Supervisory Patent Examiner
Technology Center 1621